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Container with resealable cover.

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Description

The invention relates to a container with a resealable cover, and in particular to one to contain a flowable foodstuff or the like. The invention also extends to the cover per se; and to a method of securing the cover to a flexible container while the container is being made.

Flexible containers such as bags are well known and it is also known to provide the container with a dispensing hole covered by a resealable cover, e.g. label. Usually such bags are used for flat products, see for example US patents 4 192 420 (Worrell) and 4 552 269 (Chang). Such containers are never used to contain foodstuffs, probably because of a fear of accidental or deliberate contamination of the contents via the resealable cover, and perhaps because the costs are high.

WO-A 83/00677 discloses a container having at least one flexible wall formed of a material such as a plastics film, card, board or the like, a hole being present in the wall for egress of the contents of the container, a cover overlying the hole and in sealing engagement with the wall at the perimeter of the hole, the cover including an extension which must be detached from the cover before the cover can be moved to expose the underlying hole.

It is one object of the invention to provide a flexible container to contain a foodstuff or like flowable material which container includes a resealable cover and which is arranged to provide conspicuous evidence of any tampering.

According to one aspect of the invention a container as defined above is characterised in that the extension is connected at one side to a flap portion of the cover and at the other side to an anchor portion secured to the wall of the container and is detachable from both the flap portion and the anchor portion.

In this way the possibility of unsealing the container without firstly detaching the extension is minimised.

In another aspect the invention provides a cover to be applied to a container having a flexible wall, a hole being present in the wall, the cover being adapted to seal the hole and to be releasably connected to the perimeter of the wall, the cover including an extension which must be detached from the cover before the cover can be moved to expose the underlying hole in which the extension is connected at one side to a flap portion of the cover and at the other side to an anchor portion secured to the wall of the container and is detachable from both the flap portion and the anchor portion.

In yet another aspect, the invention provides a roll of covers each to be applied to the precursor portion of a succession of containers, the covers being spaced apart along the roll, in which the covers are described and are held to a carrier strip.

In yet another aspect, the invention provides a method of applying a resealable cover to each of a succession of flexible containers each formed of flexible film, characterised by forming a slit at each of spaced apart locations along the flat film, applying a resealable cover according to the invention on

one side to one side of the film about the slit so as to seal the cover to peripheral portions of the slit, sealing opposite sides of the film to form a tube, forming a transverse seal to define a container precursor closed at one end and filling the container with a flowable material,

sealing the other end of the container and detaching the filled and sealed container from the parent film.

Preferably the label is one of the covers of the roll as defined herein.

In order that the invention may be well understood it will now be described with reference to the accompanying diagrammatic drawings, in which

Figure 1 is a plan view of one cover of the invention;

Figure 2 is a perspective view of a bag having a cover according to Figure 1 and which has been opened;

Figure 3 is a plan view of another cover of the invention;

Figure 4 shows diagrammatically a vertical form fill and seal system for applying a resealable cover to bags.

The same reference numbers are used to describe the different embodiments.

The cover C of Figure 1 comprises an integrally formed generally rectangular piece of plastics 1 having at one end a transverse hinge portion 2. The body of the cover defines a flap portion 3 which progressively decreases in width to define a flap body portion 4 and two side margins 5. At the end of the flap portion 3 is a non-adhesive area beyond which is a transversely extending detachable extension 6 and beyond that an anchor portion 7. The detachable extension 6 is connected to the neighbouring portions 3,7 by score lines 8 arranged so that a pull on a tab 9 integrally formed and present at one end of the extension 6 will detach the extension in a straight line motion from flexible bag B to which the cover C is secured. The underside of the cover is covered by an adhesive in all regions except the portion of flap 3 adjacent to the detachable extension 6 and the extension itself so that when contacted with the wall of the bag B about a dispensing hole H therein, all the parts of the cover except the defined area of flap 3 and the detachable extension 6 and its pull tab 9 are in adhesive contact with the bag wall. The hole H is formed in the wall of the bag eg. by a die cut slit to leave a flap F (Figure 2) which is secured to the underside of the flap body portion 4. The hinge area 2 includes inclined cuts 10 extending inwardly from the periphery, defining triangular portions 11. The flap portion 3 includes two lines of score holes 12 between the flap portion body 4 and the side margins 5.

In use, the cover C is applied to the bag B about the hole H so that the flap portion 4 is secured to the flap F, the side margins 5 are secured to the wall of the bag a short distance say 9 mm from the sides of the hole H, the hinged portion 2 to the end of the hole H, and the anchor portion 7 to a part of the wall of the bag beyond the hole H. When the contents of

the bag B are to be dispensed, the consumer pulls on tab 9 to tear extension 6 away from the flap 3 and lift the flap to gain access to the dispensing hole H and reseal it once enough of the contents have flowed out. The contents of the bag cannot be tampered with unless the cover is detached from the bag, and this cannot be done without detaching the extension 6 from the flap 3 and the anchor portion 7. So, the absence of the extension 6 or a part tear therein provides evidence of tamper with the contents of the bag. In addition, wording may be printed on the wall of the bag immediately below the detachable extension to tell the user that the seal of the cover has already been broken, eg. SEAL BROKEN. Because of the slits 10 at the hinge area 2 of the cover, any lifting up of that end will tear or break away the triangular portions 11 as evidence of tamper. In this way, the purchaser of the bag will have peace of mind that, despite the fact that the cover can be removed and resealed before he can open it, no one can have tampered with the bag or its contents without leaving clear visible evidence of the unauthorised activity.

The cover can be made of any suitable material which will typically be a plastics for a moisture proof seal. The underside of the cover may be coated with a pressure sensitive adhesive, which can be water based but for use with frozen foodstuffs, a solvent based acrylic adhesive is preferred. Different adhesives, either differently chemically or the same adhesive in different concentrations, may be used in different portions of the cover.

The container may be made of plastics, paper, coated paper, polyfilm, cellophane, laminates or the like. The container may be shaped as a box, cylinder, bag or the like preferably including a relatively flexible wall portion. The bag can contain any flowable material, typically a foodstuff such as cereals, rice grains, nuts, sugar, popcorn, raisins, potato crisps, etc, or a soap powder, etc.

In the embodiment of Figure 3, the cover is of arrowhead shape as seen in plan. The cover is of a low density polyethylene, which can be difficult to tear. The score lines 8A are discontinuous and of a semi-chevron shape so that the tear will be propagated in a straight line, and will not tear into the flap portion body 4.

Figure 4 illustrates diagrammatically a method of vertically form filling and sealing of bags having a resealable cover according to the invention. A roll of film for making the bags is fed at high speed via a tube former and past heat sealing and cutting stations to form bags, in the usual way. To one side of the film is a cutter 100, typically a heated wire of suitable shape, which is used to cut a U shaped slit 101 in the film at spaced apart locations to define the hole H with the flap F. A roll R comprising a carrier (C) 102 such as a silicone paper having spaced apart covers (C) is mounted to one side of the film, and is fed over a peeler bar 103 to peel off each cover C and to apply it to the film over each successive slit 101. The film then passes through a tube former 104 and the opposite edges are heat sealed by a vertical sealer 105 to form a tube. A transverse seal device 106 is present to form a trans-

verse end wall, and flowable material is fed via a feed pipe 107 to fill the bag precursor. The bag then passes a transverse seal and cut device 108 and the formed, labelled, filled and sealed bag is then detached from the parent film. The system is fast, and the supply and application of covers can be used with any fast moving vertical form and fill machine.

The invention is not limited to the embodiments shown. For example, the cover C can be circular; the hole H need not have a flap in which case there will be no adhesive on the underside of the flap body portion or a backing will be present; the hole need not be circular but can be, say, elliptical or an elongate slit; the cover can be formed of a material other than plastics, e.g a paper/metal film laminate, and the cover may contain printing such as instructions, "sell by" date or like information or advertising matter. The container may hold a wide variety of flowable materials and the cover may be resealed numerous times.

Claims

1. A container (B) having at least one flexible wall formed of a material such as a plastics film, card, board or the like, a hole (H) being present in the wall for egress of the contents of the container, a cover (C) overlying the hole and in sealing engagement with the wall at the perimeter of the hole, the cover (C) including an extension (6) which must be detached from the cover (C) before the cover (C) can be moved to expose the underlying hole (H), characterised in that the extension (6) is connected at one side to a flap portion (3) of the cover (C) and at the other side to an anchor portion (7) secured to the wall of the container (B) and is detachable from both the flap portion (3) and the anchor portion (7).

2. A container according to Claim 1 characterised in that the detachable extension (6) is connected to the flap portion (3) and the anchor portion (7) by score lines (8) arranged so that a pull on the detachable extension (6) will detach it from the flap portion (3) and the anchor portion (7).

3. A container according to Claim 2 characterised in that the detachable extension (6) includes a pull tab (9) at one end of the extension (6).

4. A container according to Claim 2 or 3 characterised in that the score lines (8A) are discontinuous and shaped so that straight tear lines will be formed.

5. A container according to any preceding Claim characterised in that the underside surface of the cover is covered by adhesive apart from the detachable extension (6) and the wall (W) of the bag (B) below the extension (6) preferably includes warning wording.

6. A container according to Claim 5 characterised in that the adhesive is a solvent base acrylic adhesive.

7. A container according to any preceding Claim characterised in that the end (2) of the cover (C) remote from the extension (6) includes means to show evidence of tamper.

8. A container according to Claim 7 characterised in that the tamper evidence means comprises **slits (10) extending inwardly from the edge and defining triangular portions (11).**

9. A cover (C) to be applied to a container (B) having a flexible wall, a hole (H) being present in the wall, the cover being adapted to seal the hole (H) and to be releasably connected to the perimeter of the wall, the cover (C) including an extension (6) which must be detached from the cover (C) before the cover can be moved to expose the underlying hole (H), characterised in that the extension (6) is connected at one side to a flap portion (3) of the cover (C) and at the other side to an anchor portion (7) secured to the wall and is detachably removable from both the flap portion (3) and the anchor portion (7).

10. A cover according to Claim 9 characterised in that the detachable extension (6) is connected to the flap portion (3) of the cover (C) and the anchor portion (7) by score lines (8) arranged so that a pull on the detachable extension (6) will detach it from the flap portion (3) of the cover (C) and the anchor portion (7).

11. A cover according to Claim 9 or 10 characterised in that the detachable extension (6) includes a pull tab (9) at one end.

12. A cover according to any of Claims 9 to 11 characterised in that the score lines (8A) are discontinuous and shaped so that straight tear lines will be formed.

13. A cover according to any of Claims 9 to 12 characterised in that the end (2) of the cover (C) remote from the extension (6) has spaced extending inwardly slits (10).

14. A roll of covers to be applied to the precursor portion of a succession of containers, the covers (C) being spaced apart along the roll (R) characterised in that the covers (C) are according to any of Claims 9 to 13 and are held to a carrier strip (102).

15. A method of applying a resealable cover (C) to each of a succession of flexible containers (B) each formed of flexible film comprising: forming a slit (101) at each of spaced apart locations along the flat film, applying a resealable cover (C) according to any of Claims 9 to 13 having a coating of adhesive on one side to one side of the film about the slit (101) so as to seal the cover (C) to peripheral portions of the slit (101), sealing opposite sides of the film to form a tube, forming a transverse seal to define a container precursor closed at one end and filling the container with a flowable material from a feed pipe (107), sealing (108) the other end of the container and detaching the filled and sealed container from the parent film.

16. A method according to Claim 15 characterised in that the container is made by a vertical form fill and seal technique.

Patentansprüche

1. Ein Behälter (B) mit mindestens einer flexiblen Wand, bestehend aus Kunststoffolie, Karton, Pappe oder einem ähnlichem Material mit einem Loch (H) in der Seite zum Austritt des Behälterinhalts, einem

Deckel (C), der das Loch bedeckt und der um den Umfang des Loches zum Schließen in die Seite greift, wobei der Deckel (C) eine Verlängerung (6) aufweist, die vom Deckel (C) zu entfernen ist, bevor der Deckel (C) bewegt werden kann, um das darunterliegende Loch (H) freizulegen, dadurch gekennzeichnet, daß die Verlängerung (6) an einer Seite am Klappenteil (3) des Deckels (C) und an der anderen Seite an einem Halteteil (7) an der Behälterseite (B) befestigt ist, und daß diese Verlängerung vom Klappen- (3) wie auch vom Halteteil (7) lösbar ist.

2. Ein Behälter gemäß Anspruch 1, dadurch gekennzeichnet, daß die lösbare Verlängerung (6) am Klappen- (3) und Halteteil (7) durch Perforationen (8) so befestigt ist, daß ein Zug an der lösbaren Verlängerung (6) diese vom Klappen- (3) und Halteteil (7) löst.

3. Ein Behälter gemäß Anspruch 2, dadurch gekennzeichnet, daß die lösbare Verlängerung (6) einen Zugstreifen (9) an einem Ende der Verlängerung (6) aufweist.

4. Ein Behälter gemäß Anspruch 2 oder 3, dadurch gekennzeichnet, daß die Perforationen (8A) unterbrochen und so angeordnet sind, daß sich ein geradliniger Riß bildet.

5. Ein Behälter gemäß allen vorhergehenden Ansprüchen, dadurch gekennzeichnet, daß die Unterseite des Deckels ganz mit Klebstoff bedeckt ist, mit Ausnahme der lösbaren Verlängerung (6) und daß die Wand (W) des Beutels (B) unterhalb der Verlängerung (6) vorzugsweise einen Warnhinweis enthält.

6. Ein Behälter gemäß Anspruch 5, dadurch gekennzeichnet, daß der Klebstoff ein lösungsmittelhaltiger Acrykleber ist.

7. Ein Behälter gemäß allen vorstehenden Ansprüchen, dadurch gekennzeichnet, daß das Ende (2) des Deckels (C) an der anderen Seite der Verlängerung (6) einen Beweis für unzulässige Eingriffe einschließt.

8. Ein Behälter gemäß Anspruch 7, dadurch gekennzeichnet, daß das Beweismittel für den unzulässigen Eingriff aus Einschnitten (10) besteht, die sich vom Rand nach innen ausbreiten und dreieckige Teile (11) bilden.

9. Ein Deckel (C) für einen Behälter (B) mit einer flexiblen Wand, die ein Loch (H) hat, wobei der Deckel zum Verschluß des Loches (H) angepaßt und lösbar am Seitenumfang angebracht ist. Der Deckel (C) weist eine Verlängerung (6) auf, die vom Deckel (C) zu entfernen ist, bevor der Deckel bewegt werden kann, um das darunterliegende Loch (H) freizulegen, dadurch gekennzeichnet, daß die Verlängerung (6) an einer Seite am Klappenteil (3) des Deckels (C) und an der anderen an einem Halteteil (7) an der Behälterwand befestigt ist und vom Klappen- (3) wie auch vom Halteteil (7) lösbar ist.

10. Ein Deckel gemäß Anspruch 9, dadurch gekennzeichnet, daß die lösbare Verlängerung (6) am Klappenteil (3) des Deckels (C) und am Halteteil (7) so mit Perforationen (8) befestigt ist, daß sie ein Zug an der lösbaren Verlängerung (6) vom Klappenteil (3) des Deckels (C) und vom Halteteil (7) löst.

11. Ein Deckel gemäß Anspruch 9 oder 10, dadurch gekennzeichnet, daß die lösbare Verlängerung (6) an einem Ende einen Zugstreifen (9) aufweist.

12. Ein Deckel gemäß Anspruch 9 bis 11, dadurch gekennzeichnet, daß die Perforationen (8A) unterbrochen und so angeordnet sind, um einen geradlinigen Riß zu bilden.

13. Ein Deckel gemäß Anspruch 9 bis 12, dadurch gekennzeichnet, daß das Ende (2) des Deckels (C), an der anderen Seite der Verlängerung (6) in Abständen nach innen verlaufende Einschnitte (10) hat.

14. Eine Rolle mit Deckeln, die alle an mehreren halbfertigen Behältern anzubringen sind, wobei die Deckel (C) in Abständen auf der Rolle (R) angeordnet sind, dadurch gekennzeichnet, daß die Deckel (C) Anspruch 9 bis 13 entsprechen und von einem Trägerstreifen (102) gehalten werden.

15. Ein Verfahren zum Anbringen eines wiederverschließbaren Deckels (C) an aufeinanderfolgenden flexiblen, aus Folie gefertigten Behältern (B), bestehend aus: einem Schlitz (101) an allen voneinander getrennten Stellen auf der flachen Folie einem wiederverschließbaren Deckel (C) gemäß Anspruch 9 bis 13 mit einer Kleberbeschichtung auf einer Seite der Folie um den Schlitz (101), um den Deckel (C) um die Peripherie des Schlitzes (101) zu schließen, gegenüberliegende Seiten der Folie zum Bilden einer Röhre, die einen Querverschluß bildet, um einen halbfertigen Behälter zu formen, der an einer Seite geschlossen ist und Füllen des Behälters mit einem fließbaren Stoff durch eine Speiseleitung (107), Verschieben der anderen Seite des Behälters und Lösen des gefüllten und geschlossenen Behälters von der Mutterfolie.

16. Ein Verfahren gemäß Anspruch 15, dadurch gekennzeichnet, daß der Behälter durch ein senkrechtes Form-, Füll- und Versiegelsystem hergestellt wird.

Revendications

1. Conteneur (B) comportant au moins une paroi flexible faite d'un matériau comme une pellicule de plastique, de bristol, de carton ou d'un produit similaire, un trou (H) étant présent dans la paroi pour permettre au contenu du conteneur d'émerger, une fermeture (C) couvrant le trou et pourvue d'un point d'attache avec la paroi le long du périmètre du trou, la fermeture (C) étant munie d'un prolongement (6) qui doit être détaché de la fermeture (C) avant que la fermeture (C) ne puisse être relevée pour exposer le trou (H) sous-jacent, caractérisé en ce que le prolongement (6) est relié d'un côté à une partie rabattue (3) de la fermeture (C) et, de l'autre côté, à une partie d'ancrage (7) fixée à la paroi du conteneur (B), et est détachable à la fois de la partie rabattue (3) et de la partie d'ancrage (7).

2. Conteneur qui, selon la revendication 1 est caractérisé en ce que le prolongement détachable (6) est lié à la partie rabattue (3) et à la partie d'ancrage (7) par des lignes entaillées (8) disposées

de manière à ce que, en tirant sur le prolongement détachable (6), ce dernier se sépare de la partie rabattue (3) et de la partie d'ancrage (7).

3. Conteneur qui, selon la revendication 2, est caractérisé en ce que le prolongement détachable (6) comporte une languette de traction (9), à l'une des extrémités du prolongement (6).

4. Conteneur qui, selon les revendications 2 ou 3, est caractérisé en ce que les lignes entaillées (8A) sont intermittentes et disposées de manière à former des lignes de déchirure droites.

5. Conteneur qui, selon toute revendication précédente, est caractérisé en ce que la surface inférieure de la fermeture est recouverte d'une matière adhésive sauf sur le prolongement détachable (6) et que la paroi (W) du sac (B) sous le prolongement (6) est de préférence pourvue d'un avertissement écrit.

6. Conteneur qui, selon la revendication 5, est caractérisé en ce que l'adhésif est un solvant à base d'adhésif acrylique.

7. Conteneur qui, selon toute revendication précédente, est caractérisé en ce que l'extrémité (2) de la fermeture (C) éloignée du prolongement (6) comporte des moyens de détecter toute infraction.

8. Conteneur qui, selon la revendication 7, est caractérisé en ce que les moyens de détection d'infraction comportent des fentes (10) qui s'étendent vers l'intérieur à partir du bord extérieur en formant des parties triangulaires (11).

9. Fermeture (C) à appliquer sur un conteneur (B) ayant une paroi flexible, un trou (H) étant présent dans la paroi, la fermeture étant adaptée de manière à sceller le trou (H) et liée au périmètre de la paroi d'une manière lui permettant d'en être détachée, la fermeture (C) comportant un prolongement (6) qui doit être détaché de la fermeture (C) avant que la fermeture puisse être découverte pour mettre à jour le trou sous-jacent (H), caractérisée en ce que le prolongement (6) est lié d'un côté à une partie rabattue (3) de la fermeture (C) et de l'autre côté à une partie d'ancrage (7) attachée à la paroi, et est détachable à la fois de la partie rabattue (3) et de la partie d'ancrage (7).

10. Fermeture qui, selon la revendication 9 est caractérisée en ce que le prolongement détachable (6) est lié à la partie rabattue (3) de la fermeture (C) et à la partie d'ancrage (7) par des lignes entaillées (8) disposées de manière à ce qu'en tirant sur le prolongement détachable (6) celui-ci se sépare de la partie rabattue (3) de la fermeture (C) et de la partie d'ancrage (7).

11. Fermeture qui, selon les revendications 9 ou 10, est caractérisée en ce que le prolongement détachable (6) comporte une languette de traction (9) à une extrémité.

12. Fermeture qui, selon l'une des revendications de 9 à 11, est caractérisée en ce que les lignes entaillées (8A) sont intermittentes et disposées de manière à former des lignes de déchirure droites.

13. Fermeture qui, selon l'une des revendications de 9 à 12, est caractérisée en ce que l'extrémité (2) de la fermeture (C), écartée du prolongement (6), est munie de fentes espacées s'étendant vers l'intérieur (10).

14. Rouleau de fermetures à appliquer à la portion préliminaire d'une série de conteneurs, les fermetures (C) étant séparées le long du rouleau (R), caractérisé en ce que les fermetures (C) sont conformes à quelqu'une des revendications de 9 à 13 et sont maintenues sur une bande porteuse (102).

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15. Méthode d'application d'une fermeture recollable (C) à chaque conteneur d'une série de conteneurs flexibles (B), chacun étant conçu à partir d'une pellicule flexible et comportant:

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la formation de fentes (101) à chacun des emplacements espacés le long de la pellicule plate;

l'application d'une fermeture recollable (C), selon l'une des revendications de 9 à 13, munie d'une couche d'adhésif sur un des côtés, d'un côté de la pellicule près de la fente (101) pour pouvoir coller la fermeture (C) aux parties périphérales de la fente (101); le collage des côtés opposés de la pellicule pour former un tube;

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la formation d'une fermeture transversale à un bout du conteneur pour en définir une première partie fermée et le remplissage du conteneur avec une matière fluide, à partir d'un tuyau d'alimentation (107); la fermeture (108) de l'autre bout du conteneur et la séparation du conteneur, rempli et scellé, de la pellicule mère.

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16. Méthode qui, selon la revendication 15, est caractérisée en ce que le conteneur est fabriqué à partir d'une technique verticale de remplissage et de collage.

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